

REMARKS

Applicant's claim 1, from which all other claims depend, is for a diffraction type lens where there are zone plates comprising concentric gratings with rectangular cross sections on each of two surfaces. The structure is generally shown in Applicants Figures 1 and 2. In this claim, Applicant does not state the intended use or purpose of the diffraction type lens.

In accordance with 35 USC § 100, Applicant fully describes Applicant's invention and discovery in the specification. The invention is a use of the claimed lens in the context of a DVD or CD-R system. 35 USC § 100 defines invention as an invention or discovery. Applicant's invention or discovery is the applicability of the claimed lens to the DVD or CD-R application.

35 USC § 101 states:

Whoever invents or discovers any new and useful process, machine, manufacture or composition of matter or any new and useful improvement thereof may obtain a patent, therefore, subject to the conditions and requirements of this title.

This additional definition found in § 101 requires inventions to be new and useful. Applicant's specification provides ample definition of a use for the claimed invention which is the unique diffraction type lens disposed in a luminous flux.

Applicant respectfully traverses the Examiner's rejection

which is stated at page 3 as follows:

. . . Therefore, it would have been obvious to have used a concentric grating in the system of Sugiura as taught by Kamihara because one would be motivated to reduce cost of manufacture and also convert light flux with high efficiency. [column 5, lines 18-35].

The Examiner has failed to show that a combination of the two references will result in anything that is new and useful for any purpose whatsoever. Sugiura '872 uses gratings of holographic element (50) which are parallel gratings to correct for coma and astigmatisms. Gratings (51) and (52) are parallel and for the purpose of coma and astigmatism correction. On the other hand, the Examiner proposes that one merely substitute the circular gratings of Kamihara. The Kamihara '274 reference teaches gratings only on one side. However, the Examiner proposes placing of gratings on both sides in order to create Applicant's claimed diffraction type lens and then placing this newly created in '872. What the Examiner has not demonstrated is that placement in '872 will result in any invention as required in 35 USC § 100 and § 101. Such invention is also the heart of 35 USC § 103 which states:

- (a) A patent may not be obtained although the invention is not identically disclosed or described as set forth in § 102 of this title . . .

§ 103 throughout uses the word "invention". Invention, as pointed out above, encompasses a known new and useful process,

machine, manufacturer or composition of matter or any new and useful improvement thereof. The Examiner here has failed to show that the combination of the two references, Kamihara and Sugiura, produces anything which would be useful.

Since the Examiner's combination of Sugiura and Kamihara yields a device which does not work, and which functions for no useful known purpose, it is simply not an invention. Lacking a combination that yields an invention, it cannot be said that the Examiner's combination is suggested by either reference taken singly or the references taken together. The references taken singly certainly do not suggest combination and when taken together, yield something which does not meet the definition of invention, namely that it must be useful. Therefore, there is clearly no suggestion of Applicant's invention as required by *In re Sernaker* 217 USPQ 1. Still further, there is no teaching within the references that one of skill in the art should look to the other reference for any purpose.

A characteristic of Applicant's invention (claim 1) is the ability to converge two different optical wavelengths into two optical recording surfaces having different disk thicknesses. For this reason an objective lens such as lens (4) of '872 is not needed in Applicant's invention. The claimed invention and the '872 disclosure are based upon different concepts. In Applicant's invention, there is no need to include a separate lens. On the other hand, an individual objective lens (4) is

used in addition to the two linear straight lined gratings in '872. Applicant's concentric gratings (claim 1) allow use without an objective lens (see Figures 2A, 2B). Applicant's claimed concentric grating diffraction lens also functions as the objective lens, thus eliminating the need for Sugiura's lens (4).

The diffraction gratings of claim 1 function as the objective lens, where the lens has wavelength selectivity so as to converge two different wavelengths on corresponding surfaces of two different recording media having different disk-thicknesses.


On the other hand, in '872 there is no description of an objective lens that has wavelength selectivity, but only an ordinary-type objective lens is described. In the case of an objective lens in '872, converging point changes in accordance with the change of refractive indices of respective wavelengths, but it is impossible to converge respective wavelengths onto respective recording surfaces by changing grating pitches as disclosed this application.

In addition, the zone plate comprising concentric gratings in Kamihara '274 has a function to convert a light flux incident thereon to a zonal illuminating light flux. Since such a zonal illuminating light flux is directed to the fly-eye lens without changing the diameter of its zonal light flux, it is totally different from the diffraction type lens of the invention that converges light flux onto a recording surface of recording medium.

For the foregoing reason, the rejection is respectfully traversed.

In view of the foregoing, it is respectfully submitted that the application is now in condition for allowance, and early action in accordance thereof is requested. In the event there is any reason why the application cannot be allowed in this current condition, it is respectfully requested that the Examiner contact the undersigned at the number listed below to resolve any problems by Interview or Examiner's Amendment.

Respectfully submitted,



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